Pearson BTEC Level 3 Nationals Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Friday 9 June 2023

Morning (Time: 2 hours)

Paper reference **31760H**

Information Technology

UNIT 1: Information Technology Systems

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

P70532A0120

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Answer ALL questions. Write your answers in the spaces provided.

1 Media students in a school create information and event materials.

(a) The media students use word processing software to create the materials.

(i) Identify **two other** types of software the media students could use to produce the materials.

(2)

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(ii) Explain **two** benefits of using word processing software to create the materials.

(4)

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(b) The students at the school use the internet to research projects. The headteacher is concerned about malware.

One type of malware is a virus that is designed to spread from one computer to another by replicating itself.

Explain **two other** types of malware.

(4)

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(c) The headteacher wants to use an online web form to gather data from students and their parents.

Explain **three** implications that should be considered when designing the web form.

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(d) Discuss how the teachers can use IT to enhance teaching and learning.

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(Total for Question 1 = 22 marks)

2 Luca runs a family business from home. His two children study at a college.

(a) Luca has purchased laptops for the family that do not have any software installed.

Explain the terms 'application software' and 'systems software'.

(4)

Application software

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System software

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(b) Luca is considering installing open-source system software.

(i) Explain **two** advantages of installing open-source system software rather than proprietary system software.

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(ii) Explain **one** disadvantage of installing open-source system software.

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(c) Luca wants to ensure the data on the laptops is protected and secure.

(i) One way Luca could protect the data is to use antivirus software.

Describe how the features of antivirus software will protect the data on the laptops.

(4)

(ii) One threat to the security of data is phishing, which tricks victims into handing over sensitive information.

Discuss **other** threats to data.

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(Total for Question 2 = 22 marks)

3 Craig is the manager of a leisure centre.

A new network is to be installed.

The leisure centre includes:

- a storeroom

- a reception area for the staff to take bookings

- an office where all administration work is undertaken

- a members' area with wireless laptops for use by members.

Craig and his staff have access to tablets that they use for personal training sessions and classes.

(a) Draw a diagram to show the integration of systems and software used in this process.

The diagram should include devices and systems that are used, including:

- a server in the storeroom

- 2 desktop PCs in the reception area with wired connections

- 2 desktop PCs and a printer in the office with wired connections

- 3 laptops in the members' area with wireless connection to the internet

- 3 tablets with wireless connection

- connection type(s) used

- annotations.

Use this space to draw your diagram for Q3a.

(6)

P 7 0 5 3 2 A 0 1 1 2 0

(b) A single-user, multitasking operating system is installed on the tablets.

Describe **three other** types of operating system.

(6)

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(c) Members can pay for classes via the leisure centre's website using their credit or debit card.

Describe how SSL/TLS protocols are used to secure this process.

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(d) Many factors influence the leisure centre's choice for the new network.

Purchase cost and security are two of these factors.

Discuss **other** factors that should be taken into consideration.

(8)

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(Total for Question 3 = 24 marks)

4 Seren Health Centre has a computerised patient details system.

The health centre uses processes to protect its system and patients' data.

One process it uses is username and password authentication.

(a) Discuss **other** processes the health centre could use to protect its system and patients' data.

You need to consider:

- file permissions

- access levels

- backup and recovery procedures

- physical access control.

(10)

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(b) The health centre uses social media to keep patients up-to-date on important information about the health centre.

Evaluate the advantages and disadvantages of the use of social media in the healthcare sector.

(12)

(Total for Question 4 = 22 marks)

TOTAL FOR PAPER = 90 MARKS

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P70532A02020

P 7 0 5 3 2 A 0 2 0 2 0